



Ultrahigh-Speed Switching Applications

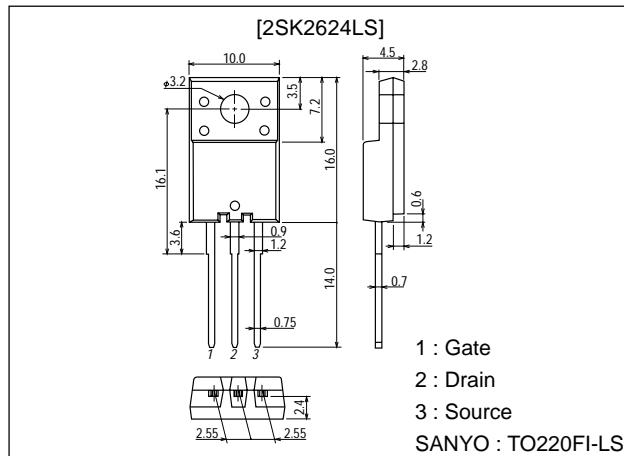
Features

- Low ON-resistance.
- Low Qg.

Package Dimensions

unit:mm

2078B



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		600	V
Gate-to-Source Voltage	V _{GSS}		±30	V
Drain Current (DC)	I _D		3	A
Drain Current (Pulse)	I _{DP}		12	A
Allowable Power Dissipation	P _D	PW≤10μs, duty cycle≤1%	2.0	W
		Tc=25°C	25	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0	600			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =600V, V _{GS} =0			1.0	mA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±30V, V _{DS} =0			±100	nA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =1mA	3.5		5.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =1.8A	1.0	2.0		S
Static Drain-to-Source On-State Resistance	R _{DS(on)}	V _{GS} =15V, I _D =1.8A		2.0	2.6	Ω
Input Capacitance	C _{iss}	V _{DS} =20V, f=1MHz		550		pF
Output Capacitance	C _{oss}	V _{DS} =20V, f=1MHz		165		pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} =20V, f=1MHz		85		pF

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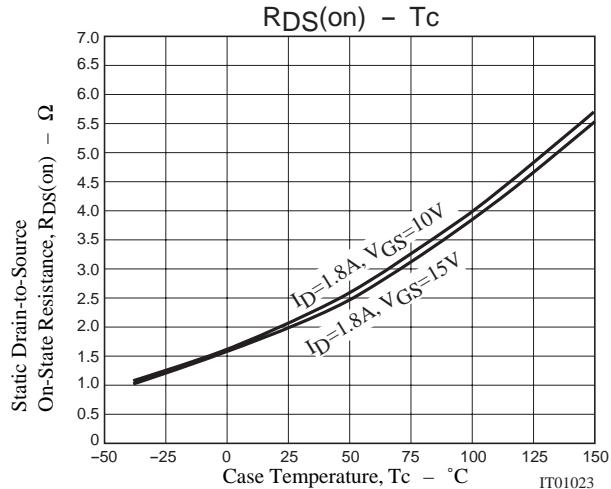
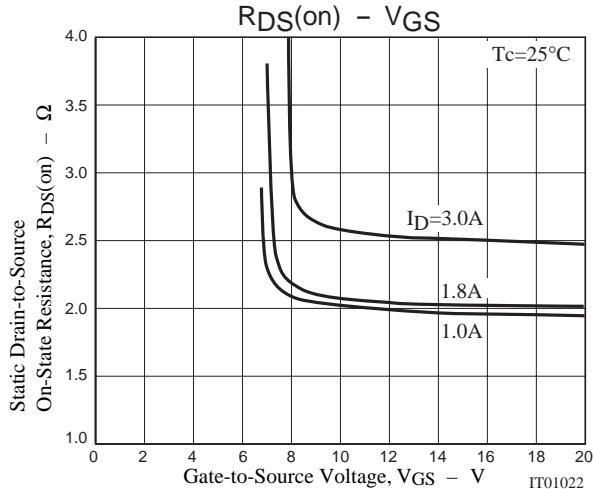
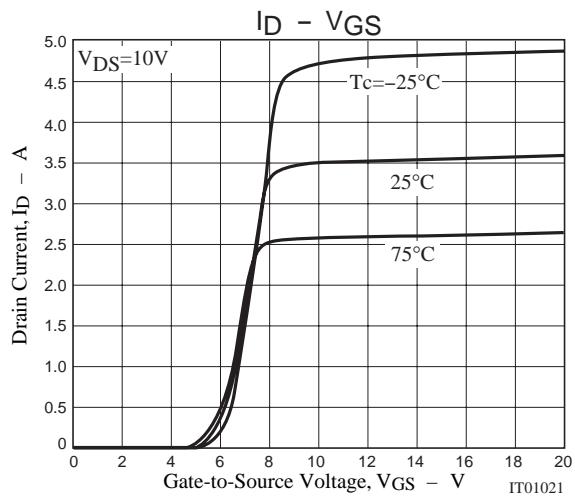
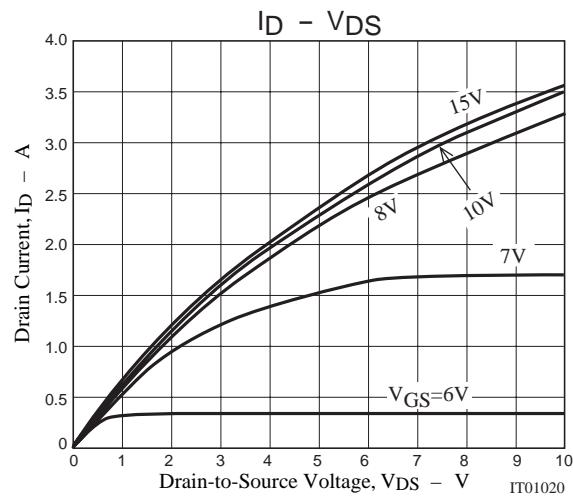
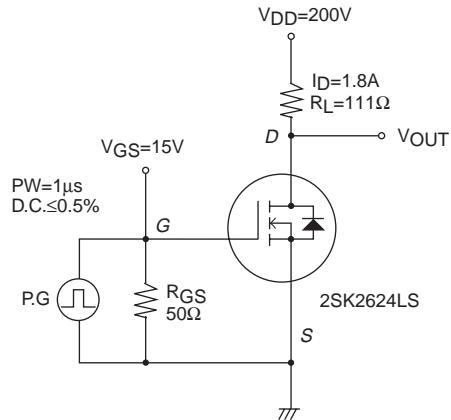
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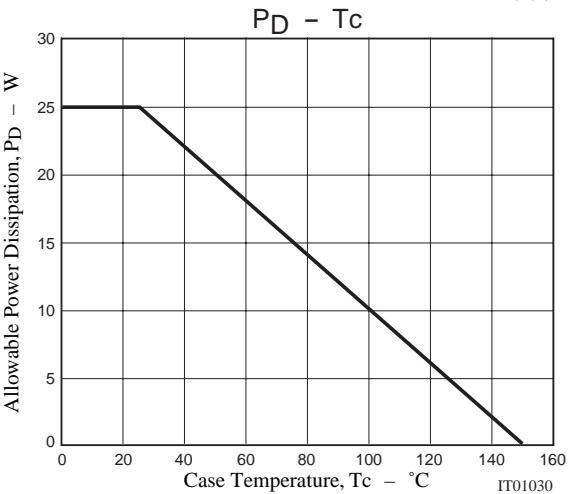
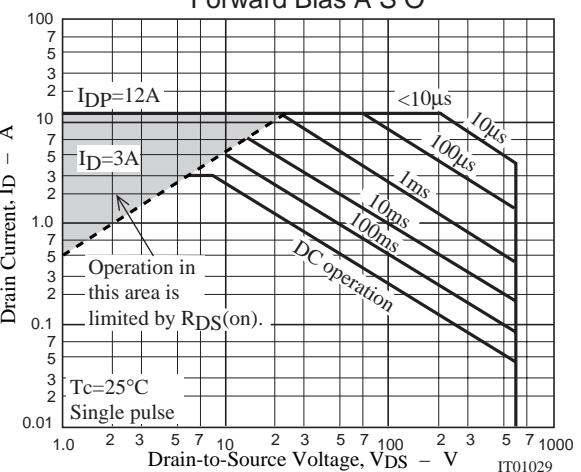
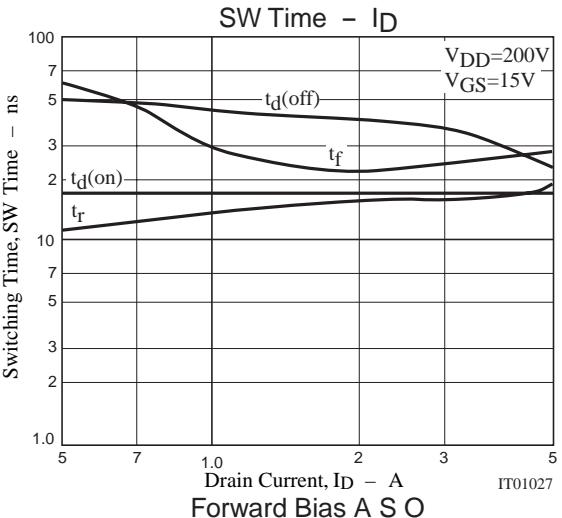
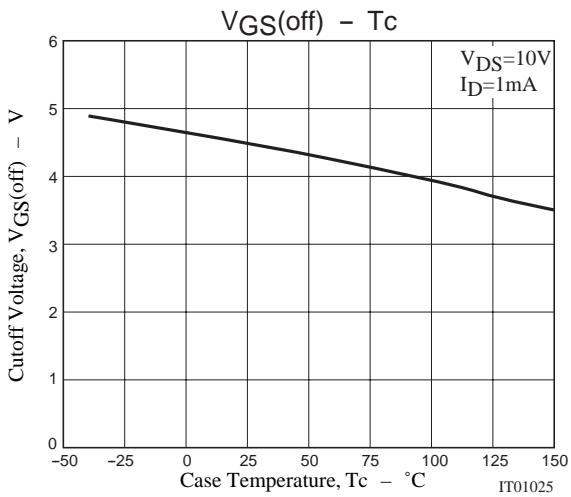
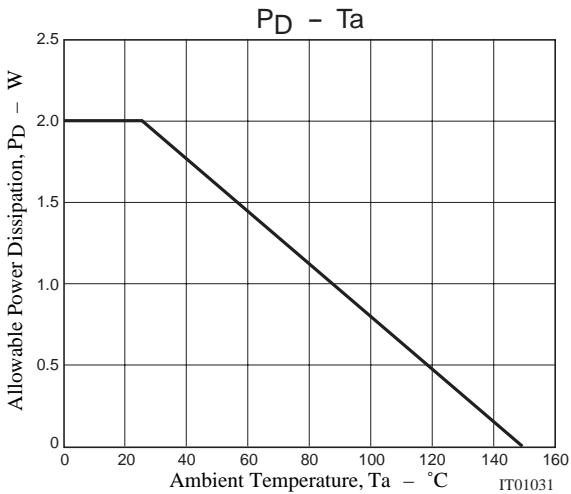
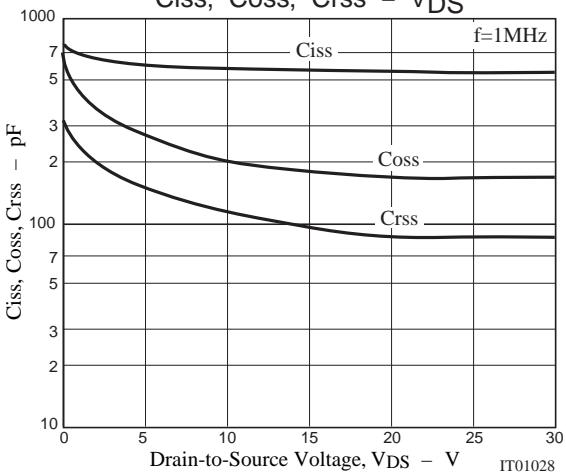
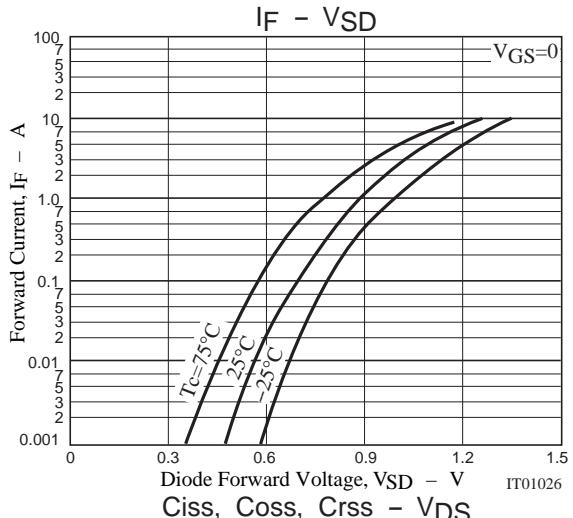
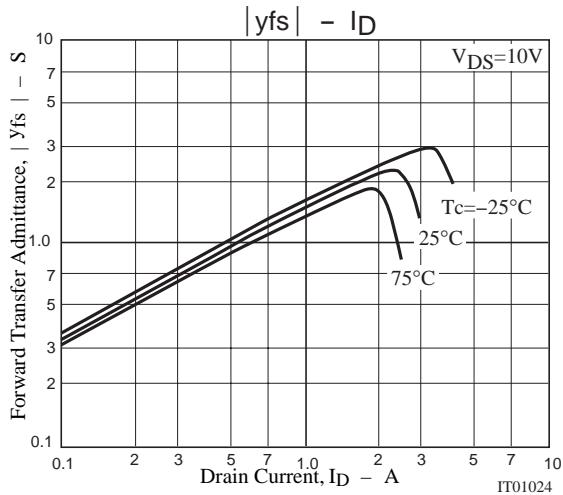
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Total Gate Charge	Q_g	$V_{DS}=200V, V_{GS}=10V, I_D=3A$		15		nC
Turn-ON Delay Time	$t_{d(on)}$	See specified Test Circuit		17		ns
Rise Time	t_r	See specified Test Circuit		17		ns
Turn-OFF Delay Time	$t_{d(off)}$	See specified Test Circuit		40		ns
Fall Time	t_f	See specified Test Circuit		22		ns
Diode Forward Voltage	V_{SD}	$I_S=3A, V_{GS}=0$		0.98	1.2	V

Switching Time Test Circuit



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